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BRIAN D. HICKMAN
HICKMAN PALERMO TRUONG & BECKER LLP
1600 WILLOW STREET
SAN JOSE, CA 95125-5106

EXAMINER

SHARON, AYAL I

ART UNIT

PAPER NUMBER

2123

DATE MAILED: 08/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/286,133

Applicant(s)

SABADELL, STEWART

Examiner

Ayal I. Sharon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/31/02.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. Claims 1-13 of U.S. Application 09/317,765 filed on 04/01/1999 (provisional application priority date 05/14/1998) are presented for examination.

Claim Rejections - 35 USC § 112

2. Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The following elements of the claimed apparatus is not described in a level of detail that would enable one of ordinary skill in the art to implement the claimed apparatus: "translating the source object to a target object", "performing a first modification to the target object", "revising said target object in said target application to reflect said second modification to said source object without removing said first modification to said target object".
3. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The following element is not described in a level of detail that would enable one of ordinary skill in the art to

implement the claimed apparatus: “translating the source object to a target object”, “performing a first modification to the target object”, “revising said target object includes the step of rendering object to reflect the second modification that was made to the CAD object without undoing the first modification to the rendering object.”

4. Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The following element is not described in a level of detail that would enable one of ordinary skill in the art to implement the claimed apparatus: “translating the source object to the target object.”
5. Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The following element is not described in a level of detail that would enable one of ordinary skill in the art to implement the claimed apparatus: “inserting the one or more modifier stacks into the hierarchical tree structure.”

6. Claims 9-11 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The following element of the claimed apparatus is not described in a level of detail that would enable one of ordinary skill in the art to implement the claimed apparatus: “translating the first object to a second object”, “performing a first modification to the second object in the second application”, “performing a second modification to the first object in the first application”, “performing a third modification to the second object based on data generated in response to said second modification to said first object, wherein said third modification causes said second object to reflect the second modification that was made to the first object without undoing the first modification to the second object”.
7. Claim 12 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The following elements of the claimed apparatus is not described in a level of detail that would enable one of ordinary skill in the art to implement the claimed apparatus: “translating the source object to a target object”, “performing a first modification to the target object”, “performing a second modification to the source object”, “revising said

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target object in said target application to reflect said second modification to said source object without removing said first modification to said target object".

8. Claims 13 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The following elements of the claimed apparatus is not described in a level of detail that would enable one of ordinary skill in the art to implement the claimed apparatus: "translating the source object to a target object", "performing a first modification to the target object", "performing a second modification to the source object", "revising said target object in said target application to reflect said second modification to said source object without removing said first modification to said target object".

Claim Interpretations

9. For the purposes of compact prosecution, Examiner interprets the meanings of the following terms that were not clarified or enabled in the specifications.
10. Examiner interprets a "modifier stack" as being a storage area for storing the modification of a property of an object

Claim Rejections - 35 USC § 102

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11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

12. The prior art cited is as follows:

13. Newcombe et al., U.S. Patent 6,324,576. (Henceforth referred to as “Newcombe”).

14. The claims are subsequently recited for Applicants’ convenience. The detailed rejections follow. Applicants’ attention is also directed to the pertinent sections of the prior art.

15. Claims 14-17 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Newcombe.

16. Claim 14 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by Newcombe.

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14. A method for translating objects between applications that use different formats, the method comprising:
generating a hierarchical structure for organizing one or more properties of a source object being translated to a target object, wherein each level of the hierarchical structure is associated with a property of an object and wherein the source object is associated with a source application and the target object is associated with a target application;
(Newcombe, especially Col.1 line 60 – Col.2, line 10, and Col.4, lines 9-55)
using one or more filter objects to determine a location, within the hierarchical structure, to map the one or more properties of the source object; and
(Newcombe, especially Col.1 line 60 – Col.2, line 10, and Col.4, lines 9-55)
storing the hierarchical structure in a target file, wherein the target file is used by the second application to construct the target object.
(Newcombe, especially Col.1 line 60 – Col.2, line 10, and Col.4, lines 9-55)

17. Claim 15 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by
Newcombe.

15. The method of claim 14, wherein each of the one or more filter objects is associated with a respective level of the hierarchical structure and associated with one or more collection objects of a set of collection objects, and wherein the step of using one or more filter objects comprises:
determining, for a property of the one or more properties of the source object, a property value from a respective filter object that is associated with the property;
(Newcombe, especially Col.1 line 60 – Col.2, line 10, and Col.4, lines 9-55)
comparing the property value with a respective collection value associated with each of one or more respective collection objects of the set of collection objects that are associated with the respective filter object; and
(Newcombe, especially Col.1 line 60 – Col.2, line 10, and Col.4, lines 9-55)
determining a level within the hierarchical structure to map the one or more properties of the source object, based on the comparing the property value with a respective collection value.
(Newcombe, especially Col.1 line 60 – Col.2, line 10, and Col.4, lines 9-55)

18. Claim 16 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by
Newcombe.

16. The method of claim 14, further comprising:
upon a modification of a property of the target object in the target application, generating a modifier stack for storing the modification, wherein the property of the target object is associated with a respective property of the source object;
(Newcombe, Col.4, lines 9-30 and Col.9, lines 35-47)

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linking the modifier stack with a collection object of a set of collection objects, wherein each collection object of the set of collection objects is associated with a respective level of the hierarchical structure; and

(Newcombe, Col.4, lines 9-30 and Col.9, lines 35-47)

applying the modification of the modifier stack to the target file via the linked collection object to construct the target object.

(Newcombe, Col.4, lines 9-30 and Col.9, lines 35-47)

19. Claim 17 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by

Newcombe.

17. The method of claim 16, wherein each of the one or more filter objects is associated with a respective level of the hierarchical structure, comprising:
upon a modification of a property of the source object in the source application, using a filter object of the one or more filter objects to determine a level within the hierarchical structure to store the modification;

(Newcombe, especially Col.1 line 60 – Col.2, line 10, and Col.4, lines 9-55 and Col.8 line 26 – Col.9, line 34)

applying the modification of the property of the source object to the target file that includes the stored hierarchical structure, at the determined level within the hierarchical structure; and

(Newcombe, especially Col.1 line 60 – Col.2, line 10, and Col.4, lines 9-55 and Col.8 line 26 – Col.9, line 34)

applying the modification of the modifier stack to the target file to construct the target object.

(Newcombe, especially Col.1 line 60 – Col.2, line 10, and Col.4, lines 9-55 and Col.8 line 26 – Col.9, line 34)

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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21. The prior art cited is as follows:

22. Barequet, Gill et al. "A data front-end for layered manufacturing". Annual Symposium on Computational Geometry: Proceedings of the 13th Annual Symposium on Computational Geometry, 1997. ISBN: 0-89791-878-9. (Henceforth "Barequet").

23. Krause, F. L. et al. "Processing of CAD-Data – Conversion, Verification and Repair". ACM Symposium on Solid Modeling and Applications, pp. 248-254. 1997. ISBN: 0-89791-946-7. (Henceforth "Kraus").

24. Wohlers, Terry. "STL Viewers and Editors". 1996.
<http://www.wohlersassociates.com/stl-view.html>

25. The claims are subsequently recited for Applicants' convenience. The detailed rejections follow. Applicants' attention is also directed to the pertinent sections of the prior art.

26. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barequet in view of Wohlers.

27. In regards to Claim 1, Barequet teaches the following limitations:

1. A method for translating objects between applications that use different formats, the method comprising:
generating a source object in a source application;
(Barequet, p.232-233)

translating the source object to a target object in a target application, wherein the target application has a format that is not supported by the source application;
(Barequet, p.232-233)

performing a first modification to the target object, wherein said first modification is not supported by said source application;
(Barequet, p.233-236)

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However, Barequet does not does not specifically teach the following limitation of Claim 1:

performing a second modification to said source object in said source application; and
revising said target object in said target application to reflect said second modification
to said source object without removing said first modification to said target object.

On the other hand, Barequet specifically refers to Wohlers (p.232, col.2, para.2), and Wohlers (See p.2) specifically teaches in reference to 3 different products that were commercially available in 1996:

- a) "Pogo 3.0 converts STL to DXF and OBJ, and vice versa"
- b) "Facet Pro permits you to read binary STL files into AutoCAD and output both binary and ASCII STL files",
- c) "Jim Ten Hoven of Kohler Company (Kohler, Wisconsin) wrote a short Auto LISP routine a few years ago that reads ASCII STL files into AutoCAD."

Thus, at the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of the two, because of any one of the following reasons:

- a) Barequet makes explicit reference to Wohlers,
- b) products with the claimed features (as listed in Wohlers) were already available at the time of the invention, and
- c) enabling manipulation of the same file in two different applications prevents unnecessary duplication of work.

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28. As per Claim 2, Barequet in view of Wohlers teaches the limitations of Claim 1, as discussed above. In addition, Barequet teaches the following limitations of Claim 2:

2. The method of Claim 1, wherein the step of performing the first modification to the target object includes the step of performing a type of modification that cannot be performed using said source application.
(Barequet, p.233-236)

29. As per Claim 3, Barequet in view of Wohlers teaches the limitations of Claim 1, as discussed above. In addition, Barequet teaches the following limitations of Claim 3:

3. The method of Claim 1, wherein:
the source application is a Computer Aided Design (CAD) application;
(Barequet, p.232-233)

the target application is a rendering application;
(Barequet, p.232-233)

and wherein
the step of generating the source object in the source application includes the step of generating a CAD object in said CAD application;
(Barequet, p.232-233)

the step of translating the source object to the target object includes the step of translating the CAD object into a rendering object;
(Barequet, p.232-233)

the step of performing the first modification to the target object includes the step of performing a modification to the rendering object;
(Barequet, p.233-236)

the step of performing a second modification to said source object includes the step of performing a modification to the CAD object; and
(Barequet, p.232-233)

However, Barequet does not does not specifically teach the following limitation of Claim 3:

- the step of revising said target object includes the step of revising the rendering object to reflect the second modification that was made to the CAD object without undoing the first modification to the rendering object.

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On the other hand, Barequet specifically refers to Wohlers (p.232, col.2, para.2), and Wohlers (See p.2) specifically teaches in reference to 3 different products that were commercially available in 1996:

- a) "Pogo 3.0 converts STL to DXF and OBJ, and vice versa"
- b) "Facet Pro permits you to read binary STL files into AutoCAD and output both binary and ASCII STL files",
- c) "Jim Ten Hoven of Kohler Company (Kohler, Wisconsin) wrote a short Auto LISP routine a few years ago that reads ASCII STL files into AutoCAD."

Thus, at the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of the two, because of any one of the following reasons:

- a) Barequet makes explicit reference to Wohlers,
- b) products with the claimed features (as listed in Wohlers) were already available at the time of the invention, and
- c) enabling manipulation of the same file in two different applications prevents unnecessary duplication of work.

30. As per Claim 4, Barequet in view of Wohlers teaches the limitations of Claim 1, as discussed above. In addition, Barequet teaches the following limitations of Claim 4:

- 4. The method of Claim 1, wherein:
the source object is associated with a source geometry and one or more source properties; and
(Barequet, p.232-233)

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the step of translating the source object to the target object includes the steps of translating the source geometry to a target geometry; and
(Barequet, p.232-233)

translating the one or more source properties to one or more target properties.
(Barequet, p.232-233)

31. Claims 5-8, are rejected under 35 U.S.C. 103(a) as being unpatentable over Barequet in view of Wohlers and further in view of Krause.

32. As per Claim 5, Barequet in view of Wohlers teaches the limitations of Claim 1, as discussed above. However, neither Barequet nor Wohlers teach the limitations of Claim 5. On the other hand, Krause does teach the limitations of Claim 5:

5. The method of Claim 1, wherein the step of translating the source object to the target object includes the step of:
building a mapping based on a translation between the source object and the target object.
(Krause, p.252, Fig. 6, and p.253 Col.1 para.1 and Col.2 para 1-2)

Thus, at the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of the two, because products with the claimed features were already available at the time of the invention (as detailed in Krause). Note that Barequet makes specific reference to Krause (Barequet, p.232, col.2, para.2).

33. As per Claim 6, Barequet in view of Wohlers and further in view of Krause teaches the limitations of Claim 5, as discussed above. In addition, Krause in view of Wohlers teaches the following limitations of Claim 6:

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6. The method of Claim 5, wherein the step of building the mapping includes the step of:
constructing a hierarchical tree structure, wherein the hierarchical tree structure is based on one or more properties associated with the source object.
(Krause, p.252, Fig. 6, and p.253 Col.1 para.1 and Col.2 para 1-2)

34. As per Claim 7, Barequet in view of Wohlers and further in view of Krause

teaches the limitations of Claim 6, as discussed above. In addition, Barequet teaches the following limitations of Claim 7:

7. The method of Claim 6, wherein
the source object is associated with a source geometry and one or more source properties; and
(Barequet, p.232-233)

translating the source geometry to a target geometry; and
(Barequet, p.232-233)

However, Barequet does not does not specifically teach the following limitations of Claim 7:

the step of constructing the hierarchical tree structure includes the steps of:
generating a set of tree objects, wherein the set of tree objects include one or more filter objects that are based on said source properties;
(Krause, p.252, Fig. 6; and p.253 Col.1 para.1, Col.2 para 1-2, and Fig. 7)

inserting said target geometry into said hierarchical tree structure based on said one or more filter objects.
(Krause, p.252, Fig. 6; and p.253 Col.1 para.1, Col.2 para 1-2, and Fig. 7)

Examiner interprets "filter objects" as being equivalent to objects that have been sorted accord to different types by a "filter". Given that the objects in the trees (Krause, Fig.6 and Fig.7) are sorted by type, it is inherent that they have been been processed by some sort of filter.

Thus, at the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of the two, because products with the claimed features were already available at the time of the invention (as detailed

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in Krause). Note that Barequet makes specific reference to Krause (Barequet, p.232, col.2, para.2).

35. As per Claim 8, Barequet in view of Wohlers teach the limitations of Claim 7, as discussed above. In addition, Krause teaches the following limitations of Claim 8:

8. The method of Claim 7, wherein the step of generating the set of tree objects includes the steps of
translating the one or more source properties to one or more target properties;
(Krause, p.252, Fig. 6; and p.253 Col.1 para.1, Col.2 para 1-2, and Fig. 7)

Krause does not specifically teach the following limitations:

generating one or more modifier stacks, wherein the one or more modifier stacks are based on the one or more target properties; and

inserting the one or more modifier stacks into the hierarchical tree structure.

Examiner interprets "modifier stacks" as being equivalent to the software data structure that is well-known and commonly used in the art, the "stack". Official notice is given that at the time of the invention, both stacks and trees were obvious and well known software data structures. Moreover, it would have been obvious to one of ordinary skill in the art to use these data structures in combination with the teachings of Krause in order to efficiently store and display the relationships between the components of a CAD design.

36. Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barequet in view of Wohlers.

37. In regards to Claim 9, Barequet teaches the following limitations:

9. A method for translating objects between applications that use different formats, the method comprising:
generating a first object in a first application;

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(Barequet, p.232-233)

translating the first object to a second object in a second application, wherein the second object has a format that is not supported by the first application;

(Barequet, p.232-233)

performing a first modification to the second object in the second application;

(Barequet, p.233-236)

performing a second modification to said first object in said first application; and

(Barequet, p.232-233)

However, Barequet does not does not specifically teach the following limitation of

Claim 9:

performing a third modification to the second object based on data generated in response to said second modification to said first object, wherein said third modification causes said second object to reflect the second modification that was made to the first object without undoing the first modification to the second object.

On the other hand, Barequet specifically refers to Wohlers (p.232, col.2, para.2), and Wohlers (See p.2) specifically teaches in reference to 3 different products that were commercially available in 1996:

- a) "Pogo 3.0 converts STL to DXF and OBJ, and vice versa"
- b) "Facet Pro permits you to read binary STL files into AutoCAD and output both binary and ASCII STL files",
- c) "Jim Ten Hoven of Kohler Company (Kohler, Wisconsin) wrote a short Auto LISP routine a few years ago that reads ASCII STL files into AutoCAD."

Thus, at the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of the two, because of any one of the following reasons:

- a) Barequet makes explicit reference to Wohlers,

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- b) products with the claimed features (as listed in Wohlers) were already available at the time of the invention, and
- c) enabling manipulation of the same file in two different applications prevents unnecessary duplication of work.

38. As per Claim 10, Barequet in view of Wohlers teaches the limitations of Claim 9, as discussed above. In addition, Barequet teaches the following limitations of Claim 10:

- 10. The method of Claim 9, wherein the step of performing the first modification to the second object includes the step of performing a type of modification that cannot be performed using said first application.
(Barequet, p.233-236)

39. As per Claim 11, Barequet in view of Wohlers teaches the limitations of Claim 9, as discussed above. In addition, Barequet teaches the following limitations of Claim 11:

- 11. The method of Claim 9, wherein:
the first application is a Computer Aided Design (CAD) application;
(Barequet, p.232-233)

the second application is a rendering application; and wherein
(Barequet, p.232-233)

the step of generating the first object in the first application includes the step of generating a CAD object in said CAD application;
(Barequet, p.232-233)

the step of translating the first object to the second object includes the step of translating the CAD object into a rendering object;
(Barequet, p.232-233)

the step of performing the first modification to the second object includes the step of performing a modification to the rendering object;
(Barequet, p.233-236)

the step of performing a second modification to said first object includes the step of performing a modification to the CAD object; and
(Barequet, p.232-233)

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However, Barequet does not does not specifically teach the following limitation of Claim 11:

the step of performing the third modification to the second object includes the step of performing a third modification to the rendering object to reflect the second modification that was made to the CAD object without undoing the first modification to the rendering object.

On the other hand, Barequet specifically refers to Wohlers (p.232, col.2, para.2), and Wohlers (See p.2) specifically teaches in reference to 3 different products that were commercially available in 1996:

- a) "Pogo 3.0 converts STL to DXF and OBJ, and vice versa"
- b) "Facet Pro permits you to read binary STL files into AutoCAD and output both binary and ASCII STL files",
- c) "Jim Ten Hoven of Kohler Company (Kohler, Wisconsin) wrote a short Auto LISP routine a few years ago that reads ASCII STL files into AutoCAD."

Thus, at the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of the two, because of any one of the following reasons:

- a) Barequet makes explicit reference to Wohlers,
- b) products with the claimed features (as listed in Wohlers) were already available at the time of the invention, and
- c) enabling manipulation of the same file in two different applications prevents unnecessary duplication of work.

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40. In regards to Claim 12, Barequet teaches the following limitations:

12. A computer-readable medium carrying one or more sequences of instructions for translating objects between applications that use different formats, wherein execution of the one or more sequences of instructions by one or more processors causes the one or more processors to perform the steps of:
generating a source object in a source application;
(Barequet, p.232-233)

translating the source object to a target object in a target application, wherein the target application has a format that is not supported by the source application;
(Barequet, p.232-233)

performing a first modification to the target object, wherein said first modification is not supported by said source application;
(Barequet, p.233-236)

performing a second modification to said source object in said source application; and
(Barequet, p.232-233)

However, Barequet does not does not specifically teach the following limitation of

Claim 12:

revising said target object in said target application to reflect said second modification to said source object without removing said first modification to said target object.

On the other hand, Barequet specifically refers to Wohlers (p.232, col.2, para.2), and Wohlers (See p.2) specifically teaches in reference to 3 different products that were commercially available in 1996:

- a) "Pogo 3.0 converts STL to DXF and OBJ, and vice versa"
- b) "Facet Pro permits you to read binary STL files into AutoCAD and output both binary and ASCII STL files",
- c) "Jim Ten Hoven of Kohler Company (Kohler, Wisconsin) wrote a short Auto LISP routine a few years ago that reads ASCII STL files into AutoCAD."

Thus, at the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of the two, because of any one of the following reasons:

- a) Barequet makes explicit reference to Wohlers,
- b) products with the claimed features (as listed in Wohlers) were already available at the time of the invention, and
- c) enabling manipulation of the same file in two different applications prevents unnecessary duplication of work.

Moreover, Barequet does not specifically teach the use of a computer readable medium. However, at the time of the invention, Official Notice is given that it would have been obvious and well known to one of ordinary skill in the art that non-trivial computer software applications and related data would need to be stored on some form of computer readable medium.

41. In regards to Claim 13, Barequet teaches the following limitations:

- 13. A system for translating objects between applications that use different formats, the system comprising:
 - a memory;
 - one or more processors coupled to the memory; and
 - a set of computer instructions contained in the memory, the set of computer instruction including computer instructions which when executed by the one or more processors, cause the one or more processors to perform the steps of (Barequet; p.231, abstract. It is inherent that a software package will run on a computer)
 - generating a source object in a source application;
(Barequet, p.232-233)
 - translating the source object to a target object in a target application, wherein the target application has a format that is not supported by the source application;

(Barequet, p.232-233)

performing a first modification to the target object, wherein said first modification is not supported by said source application;
(Barequet, p.233-236)

performing a second modification to said source object in said source application; and
(Barequet, p.232-233)

However, Barequet does not does not specifically teach the following limitation of

Claim 13:

revising said target object in said target application to reflect said second modification to said source object without removing said first modification to said target object.

On the other hand, Barequet specifically refers to Wohlers (p.232, col.2, para.2), and Wohlers (See p.2) specifically teaches in reference to 3 different products that were commercially available in 1996:

- a) "Pogo 3.0 converts STL to DXF and OBJ, and vice versa"
- b) "Facet Pro permits you to read binary STL files into AutoCAD and output both binary and ASCII STL files",
- c) "Jim Ten Hoven of Kohler Company (Kohler, Wisconsin) wrote a short Auto LISP routine a few years ago that reads ASCII STL files into AutoCAD."

Thus, at the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of the two, because of any one of the following reasons:

- a) Barequet makes explicit reference to Wohlers,

- b) products with the claimed features (as listed in Wohlers) were already available at the time of the invention, and
- c) enabling manipulation of the same file in two different applications prevents unnecessary duplication of work.

Response to Arguments

42. Applicants' arguments filed 5/31/02 have been fully considered but they are not persuasive.

THE REJECTIONS NOT BASED ON THE PRIOR ART

43. Applicants have summarized the limitations of Claims 1-13 that are alleged in the Action to be unsupported or nonenabled, along with references to the application that Applicants believe enable the claimed invention, as follows:

- (1) translating the source (or first) object to a target (or second) object (Claims 1-13);
(1): Page 1, line 25 through page 2, line 23; page 5, line 4 through page 6, line 23; FIG. 1; page 12, line 11 through page 15, line 21; FIG. 2; page 15, line 24 through page 25, line 3; FIG. 3; page 26, line 18 through page 37, line 14; FIGS. 6A-E, 7A-C.
- (2) performing a first modification to the target object (or second object in the second application) (Claims 1-13);
(2): Page 2, lines 17-23; page 4, line 7 through page 5, line 3; page 6, line 4 through page 7, line 3; page 12, line 11 through page 15, line 21; FIG. 2; page 23, line 18 through page 24, line 8.
- (3) revising said target object in said target application to reflect said second modification to said source object without removing said first modification to said target object (Claims 1-8, 12, 13);
(3): Page 12, line 11 through page 15, line 21; FIG. 2; page 15, line 24 through page 26, line 16; page 26, line 3 through page 37, line 14; FIGS. 3-7C.
- (4) revising said target object includes the step of revising the rendering object to reflect the second modification that was made to the CAD object without undoing the first modification to the rendering object (Claim 3);

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(4): Page 2, line 24 through page 5, line 3; page 6, line 4 through page 7, line 3; page 12, line 11 through page 15, line 21; FIG. 2; page 15, line 24 through page 26, line 16; page 26, line 3 through page 37, line 14; FIGS. 3-7C.

(5) inserting the one or more modifier stacks into the hierarchical tree structure (Claim 8);
(5): Page 12, line 11 through page 15, line 21; FIG. 2; page 17, line 18 through page 26, line 16; page 23, line 18 through page 24, line. 8; page 33, line 16 through page 37, line 14; FIGS. 4A, 4B, 7A-C.

(6) performing a second modification to the first (or source) object in the first application (Claims 9-11, 13);

(6): Page 5, line 21 through page 6, line 3; page 6, line 11 through page 7, line 3; page 12, line 11 through page 15, line 21; FIG. 2; page 23, lines 12-17; page 27, line 3 through page 37, line 14; FIGS. 5-7C.

(7) performing a third modification to the second object based on data generated in response to said second modification to said first object, wherein said third modification causes said second object to reflect the second modification that was made to the first object without undoing the first modification to the second object (Claims 9-11).

(7): Page 2, line 24 through page 5, line 3; page 6, line 4 through page 7, line 3; page 12, line 11 through page 15, line 21; FIG. 2; page 15, line 24 through page 26, line 16; page 26, line 3 through page 37, line 14; FIGS. 3-7C.

After reviewing the cited portions of the specification, Examiner has found that most of the citations provided by the Applicants are irrelevant to the limitations in question.

For example, in regards to the citations provided in regards to “(1) translating the source (or first) object to a target (or second) object”:

- Page 1, line 25 through page 2, line 23; The mere observation that the Word® software application can translate files created in the WordPerfect® software application does not enable the claimed invention has was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention.

- Page 5, line 4 through page 6, line 23; and FIG. 1; The labeling of an arrow in Fig. 1 as "Translation 110", and stating that "In performing the translation 110, the CAD object definitions are translated from their source data format to a rendering data format ("target data format") that is native to the visual rendering application 104" does not constitute enablement of the claimed invention.
- Page 12, line 11 through page 15, line 21; and FIG. 2; A general description of the hardware components of a personal computer is well known to people unskilled in the art, and does not constitute enablement of the claimed invention.
- FIG. 3; The labeling of a box in Fig. 3 as a "Linking Mechanism" does not constitute enablement of the claimed invention.

In the case of citations that are relevant to limitations, Applicants have referred to portions of the specification that span tens of pages without specifically pointing out the relevant material.

- Page 15, line 24 through page 25, line 3;
- Page 26, line 18 through page 37, line 14; and FIGS. 6A-E, 7A-C.

Applicants are reminded that the Examiner already reviewed the Specification in its entirety, and in detail, prior to applying the 112 rejections in Paper #9. Yet another example of the latter is for the last limitation, "(7)". Applicants have referred the Examiner to review 29 pages of specification to search for support for this feature.

In all future correspondence, Applicants are requested to specifically cite the germane parts of the specification which the Applicants believe provide enablement.

THE REJECTIONS BASED ON THE PRIOR ART

44. With respect to Claim 1, Applicants argue that “At most, Barequet describes the *reading* of files (page 232, first paragraph under sub-heading “Importing Data Files”) and/or *recognizing* file formats (page 233, first paragraph). Barequet does not teach or suggest translating an object from one format to another different format.”

Examiner respectfully disagrees. In the section titled “Importing Data Files”, (p.232-233) Barequet teaches “a partial list of file formats recognized by the front-end”, which include STL, BSTL, CFL, SOLI, RF and UNV. Barequet also teaches that “The front-end can also write data into CFL, STL, and BSTL files. When STL or BSTL files are output, the boundary polygons need to be triangulated.” Barequet also teaches that (“Repairing Data Files”, p.233, Col.1), that “After importing a data file, the DFE allows the user to analyze it, to modify it, and to fix defects in it. This is done via a software package called the *Academy*.” Examiner believes this to be sufficient evidence that Barequet suggests translating an object from one format to another different format.

45. With respect to Claim 1, Applicants argue that “The cited passages of Wohlers do not teach anything beyond a general functionality of the three products, none

of which include the capability recited in the foregoing limitation of Claim 1. As stated on page 1, paragraph 2 of Wohlers, the three products 'permit you to read, view, and edit STL files.'

This is not a teaching or a suggestion to revise a translated object in a target application to reflect a modification to an associated source object without removing a previous modification to the target object, which provides significant advantages over prior techniques or mechanisms.

A vague reference to editing functionality is not a teaching of the limitation recited in Claim 1. A prima facie case of obviousness has not been made and Claim 1 is, therefore, patentable over the references of record."

Examiner respectfully disagrees. For example, the "Facet Pro" product is taught by Wohlers as enabling the user to "read binary STL files into AutoCAD and output both binary and ASCII STL files". It would have been obvious to one of ordinary skill in the art at the time the invention was made that the use of "Facet Pro" in conjunction with AutoCAD would enable the user to "reflect a modification to an associated source object without removing a previous modification to the target object".

46. In regards to Claims 2-8, Applicants have not specifically responded to Claim rejections 2-8. Applicants should submit an argument under the heading "Remarks", specifically pointing out where Applicants differ with the examiner's contentions. Applicants must also discuss the references applied against the claims, explaining how the claims avoid the references or distinguish from them.

47. With respect to Claim 9, Applicants argue that Wohlers does not teach the limitations of Claim 9.

Examiner respectfully disagrees. For example, the "Facet Pro" product is taught by Wohlers as enabling the user to "read binary STL files into AutoCAD and output both binary and ASCII STL files". It would have been obvious to one of ordinary skill in the art at the time the invention was made that the use of "Facet Pro" in conjunction with AutoCAD would enable the user to "perform a third modification to the second object based on data generated in response to said second modification to said first object, wherein said third modification causes said second object to reflect the second modification that was made to the first object without undoing the first modification to the second object."

48. In regards to Claims 10-13, Applicants have not specifically responded to Claim rejections 10-13. Applicants should submit an argument under the heading "Remarks", specifically pointing out where Applicants differ with the examiner's contentions. Applicants must also discuss the references applied against the claims, explaining how the claims avoid the references or distinguish from them.

49. In regards to new Claims 14-17, these claims are rejected under 35 U.S.C. 102(b), as described in greater detail above.

Conclusion

50. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

51. The following prior art, made of record and not relied upon, is considered pertinent to Applicants' disclosure.

52. U.S. Patent 6,055,243, Vincent et al. Apr. 25, 2000.

53. Template Software Inc., Using the SNAP Development Environment: SNAP Version 8.0, Second Edition. Copyright 1998. Chapter 6 describes database mapping in great detail.

54. Wolfe, Stephen. "Fixing Bad CAD Data." Computer Aided Design Report, Vol. 17, No. 1, pp. 4-7. 1997. Reproduced online, <http://www.dexcenter.com/article-fix-bad-cad-data.html>
55. U.S. Patent 4,970,666, Welsh et al., Nov. 13, 1990
56. U.S. Patent 5,561,747, Crocker et al., Oct. 1996.
57. U.S. Patent 5,655,063, Crocker, Aug. 1997.
58. U.S. Patent 5,847,956, Bronfeld et al., Dec. 1998.
59. U.S. Patent 5,819,062, Srikantappa, Oct. 1998.
60. Foreign Patent WO 9736250 Wadewitz, Oct. 1997.
61. BSD Unix 4.2 Manual Pages for "termcap" and "talk"

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (703) 306-0297. The examiner can normally be reached on Monday through Thursday, and the first Friday of a biweek, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on (703) 305-9704. Any response to this office action should be mailed to:

Director of Patents and Trademarks
Washington, DC 20231

Hand-delivered responses should be brought to the following office:

4th floor receptionist's office
Crystal Park 2
2121 Crystal Drive
Arlington, VA

The fax phone numbers for the organization where this application or proceeding is assigned are:

Official communications: (703) 746-7239
Non-Official / Draft communications (703) 746-7240
After Final communications (703) 746-7238


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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, whose telephone number is:
(703) 305-3900.

Ayal I. Sharon

Art Unit 2123

August 5, 2002


DR. HUGH W. JONES
PATENT EXAMINER
ART UNIT 2123